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TITLE: DENSE MATRIX MAPPINGS IN MACULA OF THE NORMAL ELDERLY

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Purpose To observe whether there are differences in the Dense Matrix Mappings (DMM) in macula of the normal elderly between male and female, right and left eye, and the changes of different eccentricity of DMM.

Methods The DMM was designed to measure light sensitivity threshold to a white stimuli at 100 locations on a 5° region of 1° resolution at the macula using Humphrey Field Analyzer-640 in 24 eyes of the normal elderly. The age range was 50-69. The test of routine threshold programma 10-2 was compared. The statistical analysis was carried out for measurements.

Results There were no significant difference in the DMM of the normal elderly between male and female, right and left eye, but high significant differences were found in the DMM of different eccentricity. It showed the resolving power of the DMM (5° 100 stimuli) was 4 times higher than routine 10-2 programma (5° 25 stimuli).

Conclusions The DMM showed high resolving power and sensitivity in macular visual function of the normal elderly. There were no significant differences between male and female, right and left eyes in the normal elderly. It was effective in determining macular visual function and

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WHITE-NOISE FIELD CAMPIMETRY ABNORMALITIES AND COLOR VISION DISTURBANCES IN PATIENTS WITH CENTRAL SEROUS CHORIORETINOPATHY
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Purpose: At present, central serous chorioretinopathy (CSCR) is an etiologically unclear disease. Among theories like a viral infection, the vascular hypothesis is the most common one. This study was performed to find out, if there is evidence of disturbances of ocular microcirculation with non-invasive methods.

Patients and Methods: 18 patients (m:f=14:4; mean age 40±11 years) with an angiographically documented CSCR were examined between 1994 and 1995. In order to evaluate the functional changes in ocular physiology, we examined the following parameters: morphological status, visual acuity, intraocular pressure, perimetry (TAP 2000 ct, Oculus), white-noise field campimetry (TEC, Oculus) and color vision (Roth 28 HUE desaturated).

Results: Morphologically, 11 patients had intensive perilimbal ectasia of the conjunctival vessels on both eyes and a similar cup/disc-ratio between the CSCR eye and the other eye (0.26±0.1 vs 0.24±0.1). Refraction and intraocular pressure showed no differences between the affected and the control eye. The visual acuity was reduced in the CSCR eye. In the perimetry, only 8 patients had relative and/or absolute scotomas in the affected eye, but none in the control eye. In the white-noise field campimetry 17 patients (94%) had scotomas in the affected eye, only 2 patients had scotomas in the control eye. In the color test, the CSCR eye had a blue-yellow-axis disturbance and a high sum of errors. As risk factors 3 patients had a hyperlipidemia and 7 patients were smokers. In addition, general vascular diseases were: migraine (7x), peripheral vasospasmus (5x), hypertension (3x), hypotension (2x) and tinnitus (2x).

Conclusion: As a result, our findings suggest a vascular genesis of CSCR in the course of additional general vascular diseases. Visual disturbances experienced by these patients despite generally good visual acuity could be confirmed by the white-noise field campimetry and the color test. Therefore, both non-invasive methods complement the standard examination of patients with CSCR and indicate disturbances in the ocular microcirculation.

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TITLE: LOCAL ELECTROPHYSIOLOGY MEASUREMENTS IN MACULAR DISEASES

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Purpose To observe the changes and sensitivities of local electroretinogram (L-ERG) and local visual evoked potentials (L-VEP) in macular diseases.

Methods The spot light stimuli were obtained by changing the shutters with different sizes of hole at the posterior of Ganzfeld ball. The recording electrode for L-ERG was made with the filament of platinum as hook like. The L-ERG and L-VEP were simultaneously recorded in five macular diseases.

Results The wet form AMD, Stargardt's disease, acute central serous chorioretinopathy and idiopathic macular hole had seriously decreased amplitudes of L-ERG and higher abnormal rates, comparing with dry form AMD and preretinal membranes in the region of 2.5 and 5 degrees at macula. The abnormal rates in these diseases were higher for L-ERG than for L-VEP.

Conclusion The L-ERG can objectively measure the visual function of macular diseases. The smaller the area of L-ERG, the higher the sensitivity. The sensitivities of L-VEP are lower than those of L-ERG in these macular diseases.

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EVALUATION WITH INDOCYANINE GREEN ANGIOGRAPHY OF MACULAR HEMORRHAGES IN PATHOLOGICAL MYOPIA

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Purpose :

To evaluate the usefulness of indocyanine green angiography (ICG) in determining the etiology of macular hemorrhages in pathological myopia.

Methods :

A series of fifteen patients, under 60 years, noted to have a macular hemorrhages associated with high axial myopia (axial length more than 26 mm) were studied using indocyanine green angiography and fluorescein angiography (Topcon Imagenet H 1024).

Results : Macular hemorrhages were bilateral in 3 of these 15 patients. Initial visual acuity varied from 20/200 to 20/30. In all eyes, fluorescein angiography demonstrated single or multiple lacquer cracks which were hyperfluorescent and visible at the border of the hemorrhages or at distance. However, ICG allowed a precise delineation of these lacquer cracks which were hypofluorescent, more numerous and visible in the area of the hemorrhages in comparison with fluorescein angiography. Despite macular hemorrhages, myopic choroidal neovascularization was identified in two eyes by ICG only although masked on fluorescein angiography.

Conclusion : Indocyanine green angiography in comparison with fluorescein angiography has a prognostic value in macular hemorrhages in myopic eyes. On ICG, hypo fluorescent lacquer cracks are more numerous and are particularly well defined even through macular hemorrhages. Moreover, ICG is effective in the early detection of myopic choroidal neovascularization.